

Compendium

of

State Research Activities



#54

Maryland State Planning Commission

May 1948

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Compendium
of
State Research Activities



Maryland State Planning Commission

May 1948

MARYLAND STATE PLANNING COMMISSION
PUBLICATION NO. 54

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HENRY P. IRR
Chairman

I. ALVIN PASAREW
Director

May 10, 1948

Honorable Wm. Preston Lane, Jr.
Governor of Maryland
Annapolis, Maryland

Dear Governor Lane:

I take pleasure in transmitting herewith the first "Compendium of State Research Activities," in which a total of 508 research projects are listed.

In accordance with Chapter 596 of the Acts of 1947, the Maryland State Planning Commission has made a comprehensive survey of research projects which are currently being conducted by State agencies in behalf of the State and/or its political subdivisions.

Through publication of the Compendium, the Commission hopes that interchange of information and joint endeavors among the State agencies will be stimulated.

It is a privilege to be able to publish this information, in particular, so that the citizens of Maryland may be apprised of the many areas of study for which public funds are being expended.

Your interest and assistance in making this publication possible are gratefully acknowledged.

Very truly yours,

Henry P. Irr
Chairman

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FOREWORD

The results of the first Inventory of State Research Activities, conducted in accordance with Chapter 596 of the Acts of 1947, are presented herein. In response to a questionnaire circulated by the Maryland State Planning Commission, 30 out of 83 agencies noted that they are presently conducting studies relating to State problems.

Non-university investigations, numbering 112, fall into ten general categories and are grouped in Part I as follows: Archives, Conservation and Water Resources, Education, Employment and Economic Trends, Government Finances, Health and Public Welfare, Housing, Legislation and Law Enforcement, Planning and Public Works, and Transportation and Traffic Control. Studies in conservation and water resources account for 38.4% of this group, and health and public welfare, for 23.2% (Table 1). The classification of the projects is admittedly arbitrary, and in several instances the same project could conceivably fall within two or three categories. For this reason, the percentages given in Table 1 are merely indicators of the general pattern of non-university State studies and not indicative of any absolute preponderance of one field of investigation over another.

Part II deals exclusively with the current research at the colleges and professional schools of the State University. In this case, too, the percentage distribution of research projects as given in Table 2 should not be taken conclusively. However, it is noteworthy that of the total number of projects reported, 39.1% are being carried on in agriculture and 24.2% in medicine.

All projects reported to the State Planning Commission have been listed in the Compendium. Throughout the Inventory it was generally understood that all projects involving the State were reportable. For the purpose of the Compendium, research was taken to mean not only controlled experiments, original investigations, and reviews, but also surveys and compilations designed to present existing facts in a new or more usable manner.

It is intended that the State's research activities will be inventoried as often as once a year. This report is therefore preliminary and may be considerably improved and expanded when the State agencies are surveyed a second time.

The State Planning Commission is grateful to the 83 reporting agencies who cooperated wholeheartedly in the taking of the Inventory.

TABLE 1. DISTRIBUTION OF STATE RESEARCH ACTIVITIES (NON-UNIVERSITY)

SUBJECT	NUMBER OF PROJECTS	PER CENT ¹
Archives	3	2.7
Conservation and Water Resources	43	38.4
Education	8	7.1
Employment and Economic Trends	8	7.1
Government Finances	1	0.9
Health and Public Welfare	26	23.2
Housing	1	0.9
Legislation and Law Enforcement	9	8.0
Planning and Public Works	8	7.1
Transportation and Traffic Control	5	4.5
<i>Totals</i>	112	100.0

TABLE 2. DISTRIBUTION OF STATE RESEARCH ACTIVITIES (UNIVERSITY OF MARYLAND)

DIVISION	NUMBER OF PROJECTS	PER CENT ¹
College of Agriculture	155	39.1
College of Arts and Sciences	60	15.2
College of Business and Public Administration	15	3.8
College of Education	13	3.3
College of Engineering	20	5.1
College of Home Economics	3	0.8
School of Dentistry	23	5.8
School of Medicine	96	24.2
School of Pharmacy	11	2.8
<i>Totals</i>	396	100.0

¹Figures will not necessarily total 100% because of rounding.

PART I. STATE RESEARCH (NON-UNIVERSITY)

ARCHIVES

Hall of Records Commission

Dr. Morris L. Radoff, Archivist, in charge of research.

- ✓ 1. Survey of all records kept by State and State-aided agencies, with emphasis on the space required for record storage and the annual cost. Date of completion, June 30, 1948. To be printed in the *Maryland Manual* and transmitted to the Governor.
- ✓ 2. Preparation of a list of publications of all State and State-aided agencies, current and past. Date of completion, June 30, 1948. To be printed in the *Maryland Manual* and transmitted to the Governor.

Maryland Historical Society. Maryland War Records Division

3. Compilation of historical records relative to Maryland contributions to World War II and the impact of the War on the State: broad scope, including individual military service records, war histories of military installations within the State, of industries with war contracts, and of civilian defense organizations. Under direction of Harold R. Manatee, Director. Date of completion undetermined. To be printed and transmitted to the Board of Public Works. (Note: Volume on military phases of Maryland in World War II is in progress.)

CONSERVATION AND WATER RESOURCES

Board of Natural Resources. Department of Geology, Mines and Water Resources

- ✓ 4. Subsurface geology of the Eastern Shore based on the cores and cuttings of the three deep test wells. Under direction of Dr. J. L. Anderson. Date of completion, March 1948. To be printed.
- ✓ 5. Ground water resources of Salisbury Area for public water supply of Salisbury. Under direction of R. R. Bennett and R. R. Meyer. Date of completion, June 30, 1948. To be printed and transmitted to the United States Geological Survey.
6. Revision of county topographic maps. Under direction of Dr. Joseph T. Singewald, Jr., Director. Date of completion, June 30, 1949 (or later). To be printed.
7. Survey of area lost to Maryland through shore-front erosion in last 100 years. Under direction of Turbit H. Slaughter. Date of completion, June 30, 1949. To be printed.
8. Inventory of ground water resources of Maryland. Under direction of R. R. Bennett. Date of completion uncertain (long-term project). To be

printed, as areas are completed, and transmitted to the United States Geological Survey.

9. Inventory of surface waters of Maryland through maintenance of stream-gaging stations. Under direction of V. R. Bennion. Continuous study. Stream flows published annually. For transmittal to the United States Geological Survey.
10. Report on geology and other natural resources of Charles County. Under direction of Dr. Lincoln A. Dryden, Dr. Robert M. Overbeck, *et al.* Date of completion, June 30, 1948. To be printed.
11. Report on geology and other natural resources of Washington County. Under direction of Dr. Ernst Cloos *et al.* Date of completion, December 1948. To be printed.
12. Geologic map of Montgomery County. Under direction of Dr. Ernst Cloos. Date of completion, June 30, 1949. To be printed.
13. Fire clay resources of Western Maryland. Under direction of Dr. Karl Waage and Dr. T. W. Amsden. Date of completion, June 30, 1949. To be printed and transmitted to the United States Geological Survey.

Board of Natural Resources. Department of Research and Education

Dr. R. V. Truitt, Director, in charge of research.

14. Survey of Magothy River, to discover facts concerning fish and fishing, both sport and commercial, in the River. Date of completion, 1949. No information on publication plans.
15. Commercial fish hatchery operation; production of shad and yellow perch fry for release in various waters in the State. Involves evaluation of efficiency of hatchery procedures in rehabilitation of fisheries. Annual study. To be printed.
16. Composition of the commercial catch. A study to determine what year-classes are entering into the catch and in what proportion, which with other pertinent facts will help to evaluate the success of the Maryland Management Plan. Annual study. To be printed.
17. River temperatures. A study of water temperature fluctuations at the spawning ground of shad during and after spawning season; includes comparison of two rivers. Date of completion, 1948 or 1949. To be printed.
18. Artificial stimulation of hard crabs and early peeler crabs to moult; trial of several experimental techniques which have induced moulting in other crustacea. Date of completion, fall of 1948. To be printed.

19. Migrations of the blue crab; study, through tagging, of the interstate and intrastate movements of crabs. Date of completion, January 1, 1949. To be printed.
20. Survey of mud crabs in Chesapeake Bay, including determination of species, distribution, and some data on life histories. Date of completion, July 1948. To be printed.
21. Statistical survey of the Maryland blue crab fishery, including daily catch statistics of each crabber as forwarded weekly by the packing houses. Coordinated with a similar project of the Virginia Fisheries Laboratory. Annual study. To be printed.
22. Increasing the efficiency of the crab pot; development of semi-artificial bait for pots and of a self-culling pot. Date of completion, fall of 1948. To be printed.
23. Fluctuations in the supply of blue crabs and their causes: quantitative measurement of the number of crabs produced each year and study of the factors which control the size of the population. Continuing study. To be printed at intervals.
24. Oyster investigations dealing with (a) parasites, (b) predators, (c) bar composition, (d) oyster condition, (e) larval distribution, and (f) environmental factors. Continuing study, annual summaries and occasional reports on completed phases. To be printed.
25. Hydrographic study of the Chesapeake Bay tidewaters; a determination of the physical and chemical variations in the waters of the Bay and their relationship to the organisms living therein. Date of completion undetermined. To be printed.
26. Comparative growth rates and mortality of seed oysters obtained from diverse geographical localities: (a) Pamlico Sound, (b) Chesapeake area, (c) Delaware Bay, (d) Mullica River, New Jersey, (e) Long Island Sound, when planted under the same conditions as at Solomons. Date of completion, 1950. To be printed.
27. Attachment, survival, and rate of growth of oysters on shell, slag, and other cultch in (a) seed areas, (b) shelled producing bars, and (c) seed plantings. Continuing study, annual summaries and occasional reports on completed phases. To be printed.
28. Rate of attachment of oyster spat and of fouling organisms to test shells exposed periodically in various State waters, with special emphasis on seed areas. Continuing study, annual summaries and occasional reports on completed phases. To be printed.
29. Maryland fin-fish statistical program: collection of data, since 1944, on the catch of Maryland's commercial fin-fish production by species, water area, and gear, based on daily reports from fishermen. To be used as

basis for judging the results of conservation practices, as well as for the biological and economic study of the fishery. Annual survey. To be printed.

30. State-wide inventory of the State's salt- and fresh-water fin fisheries, shell or oyster fishery, and crab fishery. Includes determination of (a) net fishing in tidewater by those not required to have a license; (b) sport fishing in tidewater; (c) sport fishing in fresh water, as well as distribution of forms which make up the catches. Continuing survey, with 3- to 5-year summaries. To be printed.
31. State-wide inventory of the forests of Maryland: (a) collection and organization of backlog of information on pertinent forest studies, forest exploitations, and present remedies; (b) by use of photo-classification methods, determination of extent and types of forested areas and revision when areas are reflowed; (c) by means of ground checks of systematically chosen area plots, determination of annual forest growth, amount of merchantable and nonmerchantable timber, value of restocking, and value of certain areas to wildlife. Continuing survey, with 3- to 5-year summaries. To be printed.
32. State-wide inventory of the game birds and mammals of the State to obtain the following: (a) checklist of species and their distribution; (b) game-kill statistics; (c) census of present and potential populations of game forms; (d) relative productiveness or carrying capacity for the various regions. Continuing survey, with 3- to 5-year summaries. To be printed.
33. Biological studies of various species of commercially important fish: life histories, migrations, growth rates, effect of fishing on spawning stocks, etc. Date of completion, 1948 or later. To be printed.
34. Pond rearing of commercially important fish, involving production of fingerlings (chiefly shad) for some or all of the following: (a) release to the fishery, (b) racial studies, (c) migration studies, (d) food studies, (e) brood-sex ratios, (f) studies of the influence of environmental factors on the survival of fry and fingerlings, (g) development of effective tagging or marking methods, (h) study of the effect on the fishery of the release of pond-reared stocks. Experiments may be conducted to determine optimum fertilization conditions for maximum production of fingerlings. Date of completion, 1949 or later. To be printed.
35. Life history, distribution, and possible lethal effects of *Nematopsis* sp. on oysters in Chesapeake Bay area: (a) histological study of the organism; (b) microscopic examination of fresh material to study distribution. Date of completion, 1949. To be printed.
36. State-wide inventory of the surface water resources with emphasis on the following: (a) assembly of available information; (b) determination of work being done at present, including scope and future plans; (c) development of program to collect information on temperature and water

quality readings for 150 stations throughout the State; (d) compilation of most up-to-date map coverage and stream-system statistics. Continuing survey, with 3- to 5-year summaries. To be printed.

Board of Natural Resources. Department of Tidewater Fisheries

Ralph C. Hammer, Shellfish Culturist, in charge of research.

37. Use of slag as cultch for the attachment of seed oysters. Date of completion, November 1950. To be published as part of the *Annual Report*.
38. Studies of oyster setting, to determine the most effective oyster rehabilitation efforts for any given area or bar. In cooperation with the Department of Research and Education and the United States Fish and Wildlife Service. Continuing study. Periodic reports to be printed.
39. Use of scrap tin as a substitute for oyster bars as cultch. Date of completion, 1948. To be published as part of the *Annual Report*.
40. Studies of the effect of various concentrations of planted oyster bars and seed on the natural oyster bars of the State. Continuing study. To be published in the *Annual Report*.
41. The experimental management of oyster and seed areas to produce seed with maximum efficiency. Continuing study. To be published in the *Annual Report*.

Chesapeake-Potomac Study Commission

42. Study of fish and shellfish in the Chesapeake Bay and Potomac River. Includes compilation of biological studies made on various species of fin fish and an analysis of the Potomac oyster problem based on published and unpublished data from the two tidewater conservation agencies in Maryland and Virginia. Under direction of C. O'Connor Goolrick and Robert H. Archer. Date of completion, January 1, 1949. To be printed. (Note: The first report has been transmitted to the Governors of Virginia and Maryland and placed before the Virginia Assembly.)

Interstate Commission on the Potomac River Basin

43. Efficiency of the Cumberland pool as a sewage treatment plant. Under direction of Dr. Charles E. Renn, Sanitary Engineering Laboratories, The Johns Hopkins University. Date of completion undetermined. To be printed.

Maryland State Planning Commission

44. Survey of the industrial uses, pollution control, and flood control of Anacostia River. Under direction of Dr. John C. Geyer, Consultant. Date of completion undetermined. To be printed and transmitted to the Governor, Maryland Water Pollution Control Commission, and Department of Geology, Mines and Water Resources.

45. Integration of State water resources data and studies. Under direction of I. Alvin Pasarew, Director. Data to be made available periodically to participating State agencies. Date of completion undetermined. To be printed and transmitted to the Governor, Board of Natural Resources, State Department of Health, and Maryland Water Pollution Control Commission.

Upper Potomac River Flood Control Survey Commission

46. Flood control survey of Upper Potomac River. Under direction of John B. Funk, Chairman. Date of completion undetermined. No information on publication plans.

EDUCATION

Board of Examiners in Optometry

47. A plan concerning the possibility of establishing a School of Optometry in the University of Maryland. Under direction of the officers of the Board, Dr. A. L. Trussell, President. Date of completion undetermined. Publication plans uncertain.

State Department of Education

- ✓ 48. Surveys of the educational programs of the training schools at Cheltenham, Glen Burnie, Montrose, and Loch Raven to evaluate elements in light of valid objectives and nature of the pupil population and to make recommendations. Under direction of Dr. James E. Spitznas, Director of Instruction. Date of completion, March 10, 1948. Publication not planned. To be transmitted to State Department of Public Welfare.
49. Oyster conservation and education; through the leasing and use of oyster bars, the schools in Dorchester County seek to effect desired conservation practices by means of a program of planning and action involving pupils. Under direction of John E. Clark, Theodore Boston, and Dr. James E. Spitznas, Director of Instruction. Date of completion, about three years. Publication plans undetermined.
50. Nutrition education; over a period of years to determine what kind of education program, grades 1 to 9, will effect desired food habits and attitudes. Involves three schools in Prince George's County and includes parent education related to food activities of children in home, school, and community. Under direction of Dr. James E. Spitznas, Director of Instruction, and members of State and County staffs. Date of completion, June 1953. Publication plans undetermined.
51. School-community programs; development of more closely knit activities and services. Involves three schools in Baltimore County. Program of education and personnel will be determined by survey of needs before new schools are operated. Under direction of Dr. James E. Spitznas,

Director of Instruction. Date of first evaluation, September 1949. Publication plans undetermined.

- ✓52. Survey of school library facilities and needs, as a basis for planning a coordinated school and county library program. Under direction of Dr. Harold Hoffsommer, Department of Sociology, University of Maryland, in cooperation with Prince George's County and School Library Service Division, United States Office of Education. Date of completion, June 1948. To be printed and transmitted to participating agencies.
- ✓53. Prince George's County Library Study: followup of a preliminary survey conducted early in 1947 to determine best locations of bookmobile stops. Bookmobile schedule was started in August 1947. Present study concerned with readers' interests and needs, neighborhood groupings, leaders, etc. Under direction of Dr. Harold Hoffsommer, Department of Sociology, University of Maryland, in cooperation with Prince George's Library and Division of Library Extension. Date of completion, June 1948. No information on publication plans.
- 54. Evaluation of Maryland's program of vocational rehabilitation. Under direction of Robert C. Thompson, Director, Division of Vocational Rehabilitation. Date of completion, December 31, 1948. To be printed.

EMPLOYMENT AND ECONOMIC TRENDS

Commission to Study the Law and Practice with Respect to Physically Handicapped Persons in State Employment

- 55. Study of the employment of physically handicapped persons in the State service. Under direction of the Commission, Robert C. Thompson, Chairman. Date of completion, December 31, 1948. No information on publication plans. To be transmitted to the Governor.

Department of Employment Security

- 56. Occupational employment possibilities for new workers and experienced workers in the Baltimore Area. Analyses of job requirements and employment opportunities, both immediate and long range. Under direction of Sarah S. Blackmen, Labor Market Analyst. Continuing study. Special releases to be issued from time to time as information becomes available.
- 57. Analysis of births and deaths of Maryland business establishments subject to Unemployment Compensation for the year 1946; first of a series of studies to be used as indicators of the economic health of the State in connection with the development of employment opportunities. Under direction of Sarah S. Blackmen, Labor Market Analyst. Date of completion, May 1948. To be printed and sent to all individuals, agencies, and organizations interested in this type of information.
- 58. Employment and unemployment trends in the Baltimore Area. Under direction of Sarah S. Blackmen, Labor Market Analyst. Continuing study. Published in bimonthly newsletter.

- ✓ 59. Occupational breakdown of the unemployed in the Baltimore Area, 1948; comparison with occupational breakdown of the unemployed before the war. Includes examination of changes in types of job seekers and reasons for unemployment in period of high employment. Under direction of Sarah S. Blackmen, Labor Market Analyst. Date of completion, late summer 1948. To be printed.
- ✓ 60. Analysis of Cambridge labor market area. Under direction of Gladys N. McDermott, Labor Market Analyst. Date of completion, about June 1948. To be printed.
- ✓ 61. Analysis of Cumberland labor market area. Under direction of Gladys N. McDermott, Labor Market Analyst. Date of completion, August 1948. To be printed.

Maryland State Planning Commission

- 62. Economic developments in Maryland, with relation to the national pattern. Under direction of I. Alvin Pasarew, Director. Continuing study. To be printed in parts and transmitted to the Governor.

GOVERNMENT FINANCES

Maryland Commission on Uniform Accounts

- 63. Development of a uniform system of accounts, according to Sections 49 to 59 of Article 19 of the *Annotated Code of Maryland*. Under direction of James J. Lacy, Chairman. Date of completion undetermined. No information on publication plans.

HEALTH AND PUBLIC WELFARE

Legislative Council, Committee for Study of Problems of Chronic Alcoholism

- 64. Study of problems of chronic alcoholism. Under direction of W. Carl Lohmeyer, Chairman. Date of completion, November 1, 1948. Publication doubtful.

Maryland State Board of Examiners of Nurses

- 65. A study of the practical nurse situation in Maryland. Under direction of special committee appointed by the Board, Dorothy F. McBride R.N., President. Date of completion, April 1948. Findings will not be published. (Note: Results of study will be used by the Board to revise the curriculum and requirements in the practical nurse courses approved by the Board.)

Maryland State Planning Commission

- 66. A dental care program for school children in Baltimore City. Under direction of Dr. Lowell J. Reed, Chairman, Committee to Study the

Medical Care Needs of Baltimore City, of the Committee on Medical Care. Date of completion, March 1948. To be printed and transmitted to the Mayor of Baltimore City.

- ✓ 67. State tuberculosis program; a survey of the existing program for the control of tuberculosis in Maryland. Under direction of Dr. Canby Robinson, Chairman, Tuberculosis Survey Committee, of the Committee on Medical Care. Date of completion, fall 1948. To be printed and transmitted to the Governor.
68. Medical care needs of Baltimore City. Under direction of Dr. Lowell J. Reed, Chairman, Committee to Study the Medical Care Needs of Baltimore City, of the Committee on Medical Care. Continuing study. To be printed in parts and transmitted to the Governor and the Mayor of Baltimore City.

Maryland State School for the Deaf

69. Survey of hearing loss among public school children of the State. Under direction of Ignatius Bjorlee, Superintendent. In cooperation with the State Department of Education. Date of completion undetermined. No information on publication plans.

State Board of Mental Hygiene

70. Vitamin deficiency studies in the psychosis. Under direction of Springfield State Hospital, Dr. Robert E. Gardner, Superintendent. Date of completion undetermined. No information on publication plans.
71. Prolonged study to determine the presence and extent of mental deterioration following lobotomy. Under direction of Mildred B. Hirsh, Psychologist, Springfield State Hospital. Date of completion of preliminary report, January 1949. To be printed.
72. Changes in blood chemistry of psychotic patients. Under direction of Dr. David Macht, at Spring Grove State Hospital. Date of completion undetermined. To be published in pharmacological journal and possibly presented before the local Neuropsychiatric Association.
73. Short cuts by measuring functional loss in perception and emotional maladjustment in the hospital population. Comparison of Rorschach, T.A.T., etc., performance of: (1) psychotics and their parents; (2) fifty noninstitutionalized neurotics and fifty institutionalized psychotics; (3) psychotics and their nonpsychotic mates. Toward a concept of psychopathy from a study of Rorschach, T.A.T., etc. of serious delinquents and criminal psychotics. Under direction of Dr. Pearl Gardner, Clinical Psychologist, Spring Grove State Hospital. Date of completion, 1951. To be published in various psychological journals and transmitted possibly to the Neuropsychiatric Section of the Baltimore City Medical Society.

74. Biochemical investigation of schizophrenia. Under direction of Dr. Herman Holland DeJong, Clinical Pathologist, Spring Grove State Hospital. Date of completion, 1950. To be published in neuropsychiatric journals.
75. Dynamic application of occupational therapy and music in the treatment of regressed schizophrenics. Under direction of Dr. John Francis and Dr. John Arthur, Spring Grove State Hospital. Continuing study, reported to Staff of Hospital. To be transmitted probably to *Journal of Mental Hygiene* for publication.
76. Group therapy utilizing analytic interpretations with a group of chronic psychotics. Under direction of Dr. Percy Sutley, Spring Grove State Hospital. Date of completion, 1950. Depending on results, to be published and/or presented to a neuropsychiatric society.
77. Prefrontal lobotomies of resident patients at Spring Grove State Hospital, including electroencephalograms, psychometrics, skin resistance tests, and condition reflexes. Under direction of Staff members of the Phipps Clinic, Neurosurgical Service of the Johns Hopkins Hospital, and Spring Grove State Hospital. Date of completion, 1950. Depending on results, to be published in professional journal. (Note: A preliminary report has already been submitted by the Neurological Service at a Staff meeting at Johns Hopkins Hospital.)
78. Outpatient clinic. Participation of six Staff members of Spring Grove State Hospital, at the University of Maryland Mental Hygiene Clinic, under direction of the University of Maryland Psychiatric Staff. Date of completion, 1950. Publication plans dependent on results.
79. Pathological studies of brains of unusual cases who come to autopsy, deceased patients of Spring Grove State Hospital. Under direction of the Pathology Department, University of Maryland. Continuing study. To be published in neuropsychiatric and pathological journals and transmitted to medical societies.
80. Group therapy with regressed schizophrenics. Under direction of Dr. Barbara Betz, at the Spring Grove State Hospital. Date of completion undetermined. Publication plans uncertain.

State Department of Education

81. Study of the status of school lunch personnel in the counties, as to salaries, hours of work, age, and benefits. Under direction of Gertrude N. Bowie, State Supervisor of School Lunch Program. Date of completion, September 1, 1948. Publication not planned. For transmittal to a committee of county school lunch supervisors.

State Department of Health

82. Committee work on State public health statistics and county small area statistics, e.g., residence allocation, service statistics, case registers, etc.

Under direction of Dr. A. W. Hedrich, Chief, Bureau of Vital Statistics, and Chairman, Committee on State and Public Health and Small Area Statistics. Continuing study. To be transmitted to Council on Vital Records and Statistics, Washington, D. C., for publication.

83. Compiling Maryland vital statistics rates from 1920 to date, with emphasis on adjustment of death rates for the changing age distribution of the population in the counties. Under direction of Dr. A. W. Hedrich, Chief, Bureau of Vital Statistics. Date of completion, late 1950. Publication plans undetermined. For transmittal to local health authorities and state registrars.
84. A study of the health program of the four training schools in Maryland. Under direction of Dr. Dean Roberts, Chief, Bureau of Medical Services. Date of completion, March 31, 1948. To be typed and transmitted to the State Department of Public Welfare.
85. Dental needs survey, an analysis of the dental service needs of State welfare groups in three Maryland counties. Under direction of Dr. Richard C. Leonard, Chief, Division of Oral Hygiene. Date of completion, May 1, 1948. Publication plans undetermined.
86. A complete community nursing service is being offered in Caroline County for the purpose of determining eventually the amount and kind of nursing needed by a community and the cost of such service. Under direction of the County Health Department and the Division of Public Health Nursing. Date of completion, possibly in one year. No information on publication plans.
87. Evaluation of the cytologic test for cancer (Papanicolaou). Under direction of the Chief of the Division of Cancer Control and the Chief of the Bureau of Laboratories. Date of completion, June 30, 1949. Publication plans uncertain. To be transmitted to the United States Public Health Service, Division of Cancer Control.

State Department of Public Welfare

88. Neglect and the extent to which it contributes to delinquency. Under direction of Social Service Department, Maryland Training School for Colored Girls, Muriel E. Johnson, Superintendent. Date of completion, July 1, 1948. To be mimeographed and transmitted to the Board of Managers, State Department of Public Welfare, and other interested groups and agencies.
89. Physical defects of girls entering the Training School from July 1, 1945 through June 30, 1947. Under direction of Social Service Department, Maryland Training School for Colored Girls, Muriel E. Johnson, Superintendent. Date of completion, March 1, 1948. To be mimeographed and transmitted to the Board of Managers, State Department of Public Welfare, State Department of Health, and other interested groups and agencies.

HOUSING

Maryland Veterans' Housing Commission

- ✓90. Survey of the veterans' housing needs in Maryland counties. Under direction of members of the Commission and James P. Lazzati, Executive Director. Date of completion, July 31, 1948. No information on publication plans.

LEGISLATION AND LAW ENFORCEMENT

Board of Barber Examiners

- ✓91. Amendments needed to improve the application of existing laws to the barber industry. Under direction of the Board, Vincent A. Cinquegrani, Secretary. Date of completion, about July 1, 1948. To be printed and transmitted to the Governor and General Assembly.

Board of Natural Resources

- ✓92. Licenses, special taxes, and fees which apply to the natural resources. Under direction of the Board, William H. Bayliff, Executive Secretary. Date of completion, September 1, 1948. Subject to approval, to be printed and transmitted to the Governor, Legislative Council, and Department of Legislative Reference.

Commission to Study the Existing Child Labor Laws of Maryland

- ✓93. Study of the existing child labor laws of Maryland, for purpose of recommending revisions if found necessary. Under direction of Joseph F. Di Domenico, Chairman. Date of completion, on or before September 1, 1948. To be printed and transmitted to the Governor and Legislative Council.

Legislative Council of Maryland

Dr. Horace E. Flack, Director, in charge of research.

- ✓94. History and operation of the Declaration of Intentions Act. Date of completion, March 1948. Publication uncertain. To be transmitted to the General Assembly.
95. History and operation of the Bouse Act. Date of completion, March 1948. Publication uncertain. To be transmitted to the General Assembly.

Legislative Council, Committee on Prison Labor, Education and Rehabilitation of Prisoners

96. Study of prison labor, education, and rehabilitation of prisoners. Under direction of the Committee, Paul I. Leary, Chairman. Date of completion, November 1, 1948. No information on publication plans.

Maryland Racing Commission

97. Identification of substances used to stimulate horses; development of new and improved methods and tests. Under direction of John A. Herculson, Chemist. Continuous study. Publication plans uncertain. Findings to be presented at meetings of the Association of Official Racing Chemists.

Maryland State Board of Examiners of Stationary Engineers

- ✓98. Plant inspections of stationary engineers. Under direction of Ernest E. Green, Chairman. Date of completion, July 1948. To be printed and transmitted to the Office of State Comptroller.

Medico-Legal Psychiatry Commission

- ✓99. Study of medico-legal psychiatry. Under direction of John H. Skeen, Jr., Chairman. Date of completion undetermined. To be printed and transmitted to the Governor and General Assembly.

PLANNING AND PUBLIC WORKS*Commission on the State House and Legislative Office Space*

100. Additional space for Legislature. Under direction of Arthur H. Brice, Chairman. Date of completion, November 1, 1948. To be typewritten and transmitted to the Governor.

Maryland-National Capital Park and Planning Commission

- ✓101. Land-use survey, as a basis for preparation of new zoning ordinance and map for the Prince George's County portion of the Maryland-Washington Regional District. Under direction of Fred W. Tuemmler, Director of Planning. Date of completion, May 1, 1948. Publication not anticipated.

Maryland State Planning Commission

102. Six-year capital improvement program for Maryland: Biennial review of major State improvement projects. Under direction of Thomas C. Hubbard, Consultant. Date of completion, December 1948. To be printed and transmitted to the Governor and General Assembly.
- ✓103. Wholesale marketing facilities in Greater Baltimore. Under direction of Arthur J. Kelsey, Consultant, Wholesale Market Committee. Date of completion, October 1, 1948. To be printed and transmitted to the Governor, the Mayor and City Council of Baltimore, and the Legislative Council.
104. Development of capital improvement program for Anne Arundel County. Under direction of H. Cleveland Logue, Budget Supervisor, Anne Arundel County. Date of completion undetermined. To be printed and

transmitted to the Board of County Commissioners of Anne Arundel County.

105. Development of a plan for coordinating the services and facilities of the Baltimore Metropolitan Area. Under direction of I. Alvin Pasarew, Director. Date of completion undetermined. To be printed and transmitted to the Governor, Boards of County Commissioners of Anne Arundel, Baltimore, and Howard counties, Mayor of Baltimore City, State Department of Health, and State Roads Commission.
106. Extension of census tracts of the Baltimore Metropolitan Area. Under direction of Dr. W. Thurber Fales, Director, Bureau of Vital Statistics, Baltimore City. Date of completion undetermined. To be printed and transmitted to the Governor and the United States Bureau of the Census.
107. A study of the integration of wayside areas, scenic spots, and related developments into the State's long-range roads program. Under direction of I. Alvin Pasarew, Director. Date of completion undetermined. To be printed and transmitted to the Governor, State Roads Commission, and Board of Natural Resources.

TRANSPORTATION AND TRAFFIC CONTROL

Maryland-National Capital Park and Planning Commission

108. Comprehensive origin and destination survey, Washington Metropolitan Area. Under direction of S. R. Harrison, Deputy Engineer of Streets, District of Columbia, in cooperation with Public Roads Administration, Maryland State Roads Commission, Virginia State Roads Commission, City of Alexandria, Arlington and Fairfax counties, Virginia, and Prince George's and Montgomery counties, Maryland. Dates of completion: field work, September 1948; report, July 1949. To be printed and transmitted to participating agencies.

Maryland Traffic Safety Commission

109. Traffic accidents, causes and location. Under direction of William H. Bishop, Jr., Executive Director. Continuing study. Printed monthly and annually and transmitted to the State Roads Commission, police departments, and insurance companies.

State Roads Commission

- ✓ 110. Hagerstown origin and destination traffic studies. Under direction of Traffic Division. Date of completion, May 1, 1948. To be mimeographed and transmitted to political subdivision involved.
- ✓ 111. Origin and destination traffic study in Frederick, Maryland. Under direction of Traffic Division. Date of completion, September 1, 1948. To be mimeographed and transmitted to political subdivision involved.
- ✓ 112. Cooperative traffic study of Washington Metropolitan Area, including District of Columbia, part of Maryland, and part of Virginia. (Note: See report of Maryland-National Capital Park and Planning Commission, No. 108.)

PART II. STATE RESEARCH (UNIVERSITY OF MARYLAND)

COLLEGE OF AGRICULTURE

AGRICULTURAL ECONOMICS AND MARKETING

Dr. S. H. Devault, in charge of research.

Results to be published by the Maryland Agricultural Experiment
Station or in agricultural periodicals.

113. Trends in farm mortgage financing in Maryland.
114. Father-son partnership arrangements in Maryland.
115. The economic and social status of rural Negro families in Maryland.
116. Labor utilization in dairy buildings.
117. Insurance carried by farmers.
118. Economics of soil conservation in the Harford County Soil Conservation District of Maryland.
119. Forest taxation in Maryland.
120. Status and improvement needs of rural roads.
121. Improving farm building assessments for tax.
122. Sales taxes and their application to farmers.
123. Prices paid by farmers for commodities bought.
124. Problems in marketing in the postwar period.
125. Marketing of hatching eggs and broilers on the Del-Mar-Va Peninsula.
126. Economic aspects of marketing fresh fruits and vegetables in consumer packages.
127. Marketing premium sweet corn direct from grower to retailer.
128. Farm tenancy and leasing arrangements in Maryland.
129. Inflationary movements in the farm real estate market.
130. Pattern for the development of air freight (perishables) between the United States and countries in the Caribbean area.
131. Economic aspects of marketing spinach and kale in consumer packages.

AGRICULTURAL ENGINEERING

Ray Carpenter, in charge of research.

Results to be published by the Maryland Agricultural Experiment
Station or in agricultural periodicals.

132. Concentrated sprays. (In cooperation with Entomology.)
133. Investigations of grain storage on the farm.
134. Sweet potato curing and storing.
135. Drying hay with heated air.

AGRONOMY

Dr. W. B. Kemp, in charge of research.

Results to be published by the Maryland Agricultural Experiment Station or in agricultural periodicals.

136. Wheat-hybridization and selection.
137. Barley-hybridization for smooth awns.
138. Hay, forage, and pasture crops.
139. Soybean production in Maryland.
140. Sweet corn-seed production and breeding.
141. Improvement of pastures in the several soil provinces of Maryland.
142. Development of dent corn hybrids specifically adapted to the corn-growing areas of Maryland.
143. Effects of different short rotations on physical, chemical, and pathological conditions in the soil and on crop production.
144. Curing of Maryland tobacco.
145. Date of seeding certain legumes in Maryland.
146. Study of inheritance of oil-producing capacity in American wormseed.
147. Field studies of the fertility requirements and management of important soil types in Maryland.
148. A study of the formula and analysis for late potatoes.
149. Efficiency of soil fertility management.
150. Hydrologic studies with reference to soil moisture conservation, soil fertility, and flood control.
151. A study of the chemical and physical changes produced in a soil by the formation of the organic colloidal complex.
152. Soil fertility studies at the University farms.
153. A study of the availability of phosphate material.
154. The available supplies and relative agricultural values of by-product liming materials of Eastern Maryland.
155. A study of the lime needs and reactions in Maryland soils.
156. A study of neutralization value of slag for Maryland soils.
157. A study of the reclassification of soils and the adaptation of these classifications to soil conservation work in Maryland.
158. A study of the effect of fertilizer, boron, minor elements of the stand, yield, and composition of alfalfa.
159. Production of grain sorghums.
160. The improvement, production, and use of rye in Maryland. (In cooperation with Maryland distillers.)
161. Inspection of seeds sold throughout the State.
162. Examination of samples from seeds sold throughout the State.
163. Examination of samples submitted to the Laboratory.

ANIMAL HUSBANDRY

Dr. J. E. Foster, in charge of research.

Results to be published by the Maryland Agricultural Experiment Station or in agricultural periodicals.

164. Study of the factors which influence the production of cured pork products of desirable quality and palatability.
165. Swine-breeding investigations within the State of Maryland.
166. Wintering rations for pregnant beef cows.
167. The influence of energy intake on the performance of breeding ewes.
168. The relative value of barley and wheat hays compared to mixed clover-light timothy hay in the winter rations, etc.

ANIMAL PATHOLOGY

Dr. A. L. Brueckner, in charge of research.

Results to be published by the Maryland Agricultural Experiment Station or in agricultural periodicals.

169. Bovine trichomoniasis: diagnosis, treatment, control, and eradication.
170. Bang's disease, calfhood vaccination.
171. The formulation of a control program against fowl cholera.
172. Diagnostic tests including hematology in swine brucellosis and capsule formation in brucella.
173. Anaplasmosis of cattle.
174. Experiments with infectious enterohepatitis (blackhead) of turkeys.
175. Field trials in immunization against Newcastle disease with inactivated and modified virus vaccines—August 1947.
176. Role of disturbances in the acid-base balance in the parturient cow and their significance in the cause of milk fever and ketosis (acetoneuria)—March 1947.
177. A study of infectious bovine mastitis: its control and eradication and the economic losses attending.

BOTANY

Dr. Ronald Bamford, in charge of research.

Results to be published by the Maryland Agricultural Experiment Station or in agricultural periodicals.

178. Cytogenetic studies in the genera *Ipomoea*, *gladiolus*, and tulips.
179. The occurrence and use of haploid plants resulting from twin seedlings of pepper, cantaloupe, and other vegetable plants of importance to Maryland growers.
180. The native plants of Maryland, their occurrence, distribution, and economic importance.
181. Failure of seed formation in reciprocal crosses between double haploid peppers.

182. Some sterility problems in strawberry varieties used in a red stele resistance breeding program.
183. Potato improvement and disease control.
184. Breeding strawberries for resistance to the red stele disease caused by *Phytophthora fragarise* Hickman.
185. Disease resistance in potatoes with special reference to wilt and late blight.
186. Studies on transmissibility of the mild streak disease of black raspberries.
187. The effect of hormone and chemical treatments on breaking the rest period of seed potatoes.
188. Control of stem rot of sweet potato by sprout treatment.
189. Treatments for control of seed and soil-borne diseases of vegetable crops.
190. Development of identification and control procedures for plant virus diseases in Maryland.
191. Physiological and biochemical aspects of vegetable storage.
192. Chemical method for the determination of tobacco mosaic virus in small amounts of tissue.
193. Studies on end rot of stored Maryland golden sweet potatoes.
194. The number and morphology of the chromosomes of *Caladium* sp. (var. *Canadium*).
195. Origin of the periderm in some woody stems.

DAIRY HUSBANDRY

Dr. Gordon M. Cairns, in charge of research.

Results to be published by the Maryland Agricultural Experiment Station or in agricultural periodicals.

196. Growth data of dairy animals from birth to freshening age.
197. The effect of certain feed stuffs upon the Vitamin A requirements of dairy cattle (B.J.).
198. Reproductive efficiency in dairy cattle.
199. Chemical changes in milk fat as related to the flavor of the milk.
200. The analysis of dairy products.
201. Metabolic studies on cows with ketosis.
202. Pathological studies of cows with ketosis (B.J.).
203. The fat metabolism of the mammary gland.
204. Factors that affect the availability of nutrients in feeds and their influence upon blood composition and milk secretion (Flan-Hope).
205. The influence of high temperature heat treatments on certain physical and chemical properties of milk.

ENTOMOLOGY

Dr. E. N. Cory, in charge of research.

Results to be published by the Maryland Agricultural Experiment Station or in agricultural periodicals.

206. Investigations of the biology and control of insects affecting canning crops.

207. Sub. 6. The pea aphid. Insecticidal control and timing treatments.
208. Nursery insects.
209. The tobacco horn worms.
210. The biology and control of the Japanese beetle.
211. The biology and control of the European corn borer under Maryland conditions.
212. Concentrated sprays.
213. The codling moth.
214. The biology and control of the pests of commercial floriculture.
215. The effect of DDT on aquatic life.
216. The effect of various formulations of DDT on plant and animal development.
217. A monographic study of the coccid family *Aclerdidae* (order Homoptera) state.
218. The control of insects attacking peach foliage and fruit.
219. Control of the peach tree borer.
220. Patuxent project on the effect of soil conservation upon insect populations.

HORTICULTURE

Dr. I. C. Haut, in charge of research.

Results to be published by the Maryland Agricultural Experiment Station or in agricultural periodicals.

221. Factors affecting maturity, shipping, and storage quality of fruits.
222. Relation of soil moisture, age of plants, size of plants, spacing of plants, and use of mineral nutrients to flower differentiation, fruit yield, and quality of the strawberry.
223. Adaptation of fruit varieties and new seedlings to Maryland.
224. Environmental factors and cultural practices in relation to the growth and fruiting responses of fruits.
225. The influence of fertilizer placements and analyses on the yield and quality of vegetables grown for processing.
226. Grading raw products.
227. Factors influencing yield and quality in the production and processing of vegetables.
228. Methods of determining and presenting quality, including nutrient value, etc. (Flan-Hope).
229. The value of organic matter in the production of vegetable crops.
230. A study of regional adaptation of certain vegetable crops and varieties in Maryland.
231. The effect of certain factors on the growth of tomato plants and the quality of the fruit.
232. Breeding new strains of vegetable crops.
233. Breeding and selection of a fruitful type of lima bean for Maryland.
234. Crop management studies with vegetable crops.

- 235. Basic physiological nutrition of horticultural plants in relation to plant behavior, fruitfulness, etc.
- 236. Cation-boron relationships in sweet potato nutrition.
- 237. The mineral levels and interrelationships of mineral nutrients in fruit plantings in Maryland (Purnell).
- 238. Basic physiological studies on the quality of fresh vegetables as modified by various factors during harvesting, preparation for market, and storage.

POULTRY HUSBANDRY

Dr. Morley A. Jull, in charge of research.

Results to be published by the Maryland Agricultural Experiment Station or in agricultural periodicals.

- 239. Hormones and molting in the domestic fowl.
- 240. Hatchability studies in poultry.
- 241. Effect of disturbance upon oviposition in the domestic fowl.
- 242. The effect of hypo and hyperthyroidism upon hatchability in domestic fowl.
- 243. Differences in thyroid activity as related to strain differences in growth, feed utilization, and feathering.
- 244. The grading of dressed poultry as affected by body type and other factors.
- 245. A study of farm egg-cooling systems.
- 246. Deterioration in eggs in relation to time and temperature changes and a study of thermostabilizing processes.
- 247. Changes in grades of eggs in carlot shipments in relation to season, shipping distance, temperature, time, and other factors.
- 248. Various levels of stilbestrol plus thiouracil in finishing broilers for market.
- 249. Medium-sized strain of turkeys with certain desirable qualities.
- 250. Developing a superior egg and meat producing strain of chickens having Columbian plumage pattern.
- 251. Study of the pantothenic acid and sparing factors.
- 252. The requirement of the growing chick for newer members of the Vitamin B complex.
- 253. Nutritive deficiencies in corn.
- 254. Amino acids in poultry nutrition.
- 255. The importance of fiber in poultry rations (Purnell).
- 256. Viability of Maryland poultry.
- 257. Developing a possible test for the presence of avian leucosis.
- 258. The role of wheat in pullet disease of chickens.
- 259. Response in feathering in hybrid and purebred fowl fed selenium as a check on feather-pigment reactions due to leucosis.
- 260. Effect of long-time thiouracil treatment on feather pigmentation in brown leghorns and other breeds and hybrids as a further check on feather-pigment reactions due to leucosis.
- 261. Gas fumigation for used baby chick boxes.

262. Studies on the possibility of distinguishing by plumage markings between homozygous and heterozygous barred plymouth rock males used in hatchery flocks.
263. The effect of brooding environment upon poultry.
264. Relations of thymus to induced molt.
265. Determining feather genotype through hormone effects in lieu of breeding.
266. Effect of thiouracil and other hormones on growth in chickens.
267. The influence of methods of dressing and holding on the quality of poultry meat.

COLLEGE OF ARTS AND SCIENCES

BACTERIOLOGY

Dr. J. E. Faber, in charge of research.

Results to be published in professional periodicals.

268. Studies on immunity in brucellosis.
269. Serological studies of the paracolon group.
270. The bacterial flora of turkeys.
271. A bacteriological study of malty milk.
272. Significance of the genus *Proteus* in dairy products.
273. Dehydrogenase studies on *Mycobacterium flavum*.
274. A modification of the F. D. A. technic for the evaluation of the bactericidal activity of quaternary ammonium disinfectants.
275. Metabolic studies on thermophilic sporeforming bacteria.
276. Nutritional requirements of bacteria in the genus *Neisseria*.
277. Attempts to isolate influenza and herpes-simplex viruses from the circumambient air to indoor sports events.
278. An investigation of beta hemolytic streptococci and streptococci of the viridans group as indicators of air pollution.
279. A laboratory study of the action of a technical grade of alkyl-dimethyl benzyl ammonium chloride on some organisms associated with bovine mastitis.
280. A study of supplementary methods for the routine examination of drinking water.
281. Hemolytic action of enterococci on various types of blood.

CHEMISTRY

Dr. Nathan L. Drake, in charge of research.

Results to be published in professional periodicals.

282. Preparation of a synthetic analog of the adrenal cortical hormones.
283. Investigation of the color reactions of metals and resorcinol.
284. Studies in amino acids.

- 285. Preparation of organic chemicals needed by the Quartermaster Corps, Department of the Army.
- 286. Studies in anticorrosive agents.
- 287. Studies in malarial diseases.
- 288. Studies in cancer therapeutics.
- 289. Studies in cancer chemotherapy.
- 290. Studies in theoretical organic chemistry.
- 291. Studies in theoretical physical chemistry.

ENGLISH

Dr. Guy A. Cardwell, in charge of research.

Results to be published in professional periodicals.

- 292. Critical opinions of Ambrose Bierce.
- 293. The province of reason in the philosophy of Jonathan Edwards and Matthew Tindal.
- 294. Roman Catholic literary critics of John Milton.
- 295. Parodies of the poems of Robert Browning.

GEOGRAPHY

Dr. O. E. Baker, in charge of research.

Results to be published in professional periodicals and publications of the United States Government.

- 296. Studies in microclimatology.
- 297. Preparation of an atlas of the world's economic resources.
- 298. Preparation of an atlas of China.

HISTORY

Dr. W. M. Gewehr, in charge of research.

Results to be published in professional periodicals.

- 299. Status of democracy in revolutionary North Carolina.

MATHEMATICS

Dr. M. H. Martin, in charge of research.

Results to be published in professional periodicals.

- 300. Reflection of light rays from a curved surface.
- 301. Ideal theory (mathematics).
- 302. Chromatic polynomials.
- 303. On the Cauchy-Riemann differential equations.

PHYSICS

Dr. Raymond Morgan, in charge of research.

Results to be published in professional periodicals.

- 304. Synchrotron phase oscillations.
- 305. Body temperature control of rats at altitude under various relative humidities.
- 306. Quality and intensity of the underwater sound field of self-propelled boats.
- 307. Measurement of the mean life of positive and negative mesons.
- 308. The design of resistance-capacitance coupled amplifiers for higher frequencies.
- 309. Extension of the upper frequency limit of triode oscillators.
- 310. Optical constants.

PSYCHOLOGY

Dr. D. D. Smith, in charge of research.

Results to be published in professional periodicals.

- 311. Evaluation of lights as warning devices for aircraft.
- 312. Auditory warning signals in aircraft.
- 313. The evaluation of a psycho-motor task for use in the study of warning signals for aircraft.
- 314. Development of a text book in psychology for leaders.
- 315. Evaluation of training for leadership.
- 316. Situational factors in leadership.
- 317. Methods of identifying persons unsuitable for military service.
- 318. Evaluation of mathematics placement test.
- 319. Measurement of verbal and interpretation discrepancies between supervisors and management as seen via rating procedures.
- 320. A method for appraising the extent to which vocational counselors are aware of specific counselee attitudes toward the counseling situation.

SOCIOLOGY

Dr. Harold Hoffsommer, in charge of research.

- 321. Community and population bases in planning county library services.
(Note: See report of State Department of Education, No. 53.)

ZOOLOGY

Dr. Norman E. Phillips, in charge of research.

Results to be published in professional periodicals.

- 322. The histology and morphology of the radula of *Littorina irrorate* (Say) and its taxonomic importance.

323. Measurement of the rate of digestion of some fishery products in the stomach and small intestine.
324. Effects of added respiratory dead-air space on the blood.
325. The distribution of zooplankton in impounded acid waters.
326. Bottom and littoral invertebrate fauna of acid ponds.
327. Transplantation of neoplastic tissue of the rat on the chorio-allantois of the chick.

COLLEGE OF BUSINESS AND PUBLIC ADMINISTRATION

Dr. J. F. Pyle, in charge of research.

Results to be published in professional periodicals, including
those of the College.

328. Unemployment in Great Britain.
329. The economic development of Iran.
330. Economic development of Peru and its commercial relations with the United States.
331. International civil aviation organization and the regulation of air commerce.
332. National War Labor Board policies in relation to incentive wage plans.
333. Significant trends and needs in personnel administration.
334. Pensions, benefit plans, and insurance plans as subjects of collective bargaining.
335. The attitude of organized labor toward job evaluation during the wage stabilization period (1942-45) and the post-wage stabilization period (1945-48).
336. Market study of Annapolis, Maryland.
337. Techniques for determining employee wants and their application in forming personnel policies.
338. Transportation of petroleum and petroleum products in the United States.
339. Application of the sociometric method to problems of transfer and promotion.
340. Maryland State finances.
341. Survey of the government of Takoma Park, Maryland.
342. Improving government in Dundalk, Maryland.

COLLEGE OF EDUCATION

Dr. Harold Benjamin, in charge of research.

Results to be published in professional periodicals.

343. Comparison of the intelligence of Negro and white children in similar occupational groups.

344. Use of the tachistoscope in the teaching of spelling.
345. Comparison of social adjustment of retained children to those who were passed without meeting academic standards.
346. Developing and evaluating an elementary school report card.
347. Study of the private vocational schools in Baltimore.
348. Content study of aviation for high school teaching.
349. School boards in Maryland.
350. Place of graphic arts in industrial arts education.
351. Development of industrial arts in Pennsylvania.
352. Development of industrial arts in its cultural setting.
353. A study of the assessed value of real property in Prince George's County, Maryland.
354. Methods of teaching safety in the junior high school.
355. Vocational adjustment of dropouts of a senior high school.

COLLEGE OF ENGINEERING

Dean S. S. Steinberg, in charge of research.

Results to be published in professional periodicals.

356. Study of the detonation and combustion in internal combustion engines.
357. Study of the water recovery from internal combustion engines.
358. Design and construction of a six-cylinder, two-cycle wobble-plate engine.
359. Rotary internal combustion engine.
360. Analysis of air-cooling gas turbine blades.
361. Stress concentration around lightening holes in shear webs.
362. Design of a supersonic wind tunnel.
363. Resonant frequency of a cavity-type filter as a function of the coupling.
364. Grating spectrometer for millimeter waves.
365. A low frequency F-M discriminator.
366. Analysis of triple-resonant-circuit band-pass filter.
367. Panoramic radio reception principles applied to harmonic analysis.
368. Wide-band directional coupler and the factors influencing its accuracy.
369. Investigation of an improved conductance measuring circuit at 100 MC/Sec.
370. Analysis of operation of carbon pile voltage regulator.
371. Statistical study of pulses.
372. Variables affecting the weight of DC aircraft electric motors, and the selection of the ranges of these variables to produce the lightest weight motors.
373. Microwave techniques for particle acceleration.
374. Design of a sanitary engineering laboratory.
375. Soil stabilization studies in the design of airports.

COLLEGE OF HOME ECONOMICS

Marie Mount, in charge of research.

Results to be published by the Maryland Agricultural Experiment Station or in agricultural periodicals.

376. Comparative study of fibers used for women's hosiery for a period of years from 1918-1948.
377. Consumer preference organoleptically tested for fresh-dressed and drawn poultry held under marketing conditions.
378. Sugar analysis of ten brands of nine canned fruits and syrup by the brix determination in relation to diabetic patients.

SCHOOL OF DENTISTRY

Dr. J. Ben Robinson, in charge of research.

Results to be published in professional periodicals, including the *Bulletin of the School of Medicine, University of Maryland*.

379. History of dentistry in Maryland.
380. A new concept of pocket formation.
381. Bacterial cultures of organisms in periodontosis.
382. The spreading factor in periodontal disease.
383. Traumatic injury as a factor in adamantinoma formation.
384. Traumatic injury as a factor in cyst formation.
385. Use of L-arterenol as a vasoconstrictor agent in local anesthetic preparations.
386. A critical study of procaine and pontocaine as local anesthetic drugs.
387. Evaluation of epinephrine, cobefrin, and neosynephrine as vasoconstrictors.
388. The use and absorbability of oxidized cellulose in conjunction with dentalone for the control of hemorrhage and pain.
389. The dentist in literature.
390. A study of the supporting structures of the teeth of the rat following alloxan diabetes.
391. The effect of commercial growth complex upon the oral structures of normal rats. (Preliminary work completed.)
392. Study of ossification centers in the humerus.
393. The effects of colchicine on the development of the enamel of the teeth.
394. The rate of eruption of rat incisors as related to colchicine effects.
395. Cytologic evidences of dentin development.
396. Cytologic polarization in ameloblasts.
397. The relation between the normal human electroencephalogram and Rorschach test factors.
398. Changes in the human brain wave pattern and subdural hematoma.

BACTERIOLOGY

Dr. D. E. Shay, in charge of research.

Results to be published in professional periodicals.

- 399. The resistance of the poliomyelitis virus to fluorine.
- 400. The fungicidal activity of certain organic compounds.
- 401. The antibacterial activity of stilbestryl compounds against gram negative and gram positive organisms.

SCHOOL OF MEDICINE

ANESTHESIOLOGY

Dr. Fred C. Dye, in charge of research.

Results to be published in professional periodicals, including the
Bulletin of the School of Medicine, University of Maryland.

- 402. The use of dilute solutions in continuous spinal technique.
- 403. Hypobaric pontocaine (0.1%) for proctologic surgery.
- 404. Pentothal-curare combination in intubations and prolonged anesthesia.
- 405. The use of intracaine 1% (Squibb) intravenously to control cardiac arrhythmias in lung and heart surgery.
- 406. Spinal anesthesia in obstetrics, 5,000 cases.
- 407. Unilateral spinal anesthesia for lower extremity surgery.

BIOLOGICAL CHEMISTRY

Dr. H. Boyd Wylie, in charge of research.

Results to be published in professional periodicals, including the
Bulletin of the School of Medicine, University of Maryland.

- 408. A microbiological study of the concentration of individual amino acids in health and in disease.
- 409. Development of methods for the determination of the individual phenolic bodies in the blood and urine.
- 410. The nutritional requirements of *Cryptococcus Neo-formans*.
- 411. Possible use of metal porphyrins in the detection and treatment of cancer.
- 412. Rapid screen test for estimation of urinary porphyrins.

GENERAL SURGERY

Dr. Thomas B. Aycock, in charge of research.

Results to be published in professional periodicals, including the
Bulletin of the School of Medicine, University of Maryland.

- 413. Effects of sympathectomy on the peripheral vascular system. Detailed anatomical studies of 32 autopsy studies with elucidation of ineffective sympathectomies.

414. Effects of tetra-ethyl ammonium on the sympathetic and para-sympathetic systems, with clinical correlation in the Vascular Clinic.
415. Effects of prisco (benzyl-imidazoline hydrochloride) on the sympathetic and para-sympathetic systems, with particular reference to spastic vascular disease, such as Raynaud's disease, with clinical correlation in the Vascular Clinic.
416. Polythene, a cellophane-like substance, studied for fibrous tissue-stimulation qualities.
417. Pedicle graft of jejunum into stomach, with reference to the blood supply in the pathology of stoma ulcers.
418. Comparison of Blalock and Pott's chest operation, with evaluation of stoma, and advantages of one procedure over the other.
419. Studies of alpha-tocopherol for its effects on surface ulcerations of all categories and on peripheral vascular disease.
420. Studies to determine the reason for failure of apparently patent gastric stoma, including analysis of all hospital records for a ten-year period and questionnaire to members of the American Surgical Association. Animal work will start after July 1, 1948.
421. Preliminary work on vascular anastomosis, for application to portal-caval shunt and valvulotomy.

GROSS ANATOMY

Dr. Eduard Uhlenhuth, in charge of research.

Results to be published in professional periodicals, including the
Bulletin of the School of Medicine, University of Maryland.

422. Studies on the anatomy of the pelvis, with special reference to gynecology and urology.
423. Studies on the anatomy of the male external genitalia, with special reference to the problems of urology.
424. Permeability for urine of the membranous tissues of the male external genitalia, with special reference to problems of urology.
425. A study of the nerves innervating the blood vessels of the arm and hand, as applied to the surgical treatment of certain disorders of the blood circulation in the hand.
426. The histology of the blood as affected by the administration of sulfa drugs.
427. The role of cosmic rays in the causation of cancer.
428. The effect of cosmic radiation on the production of cancer, comprising a large series of studies performed in the coal mines of Pennsylvania.
429. The application of the fluorescence of porphyrins in the detection of cancer.
430. Porphyrin metabolism with special reference to cancer.
431. Radioactive metal-porphyrins, with special reference to the detection and treatment of cancer.
432. Forces which affect the twisting of the upper arm bone (humerus) with special reference to occupation and heredity.

433. The inheritance of certain anomalous formations of the jaw bones; a statistical study in medical students and their families.
434. Arterio-venous communications and their effects on the circulation of the blood, in man and certain lower animals.
435. A study of adhesions between the heart and its pericardial sac, in the light of their significance in prolonging the life in cases of coronary thrombosis.
436. The ballistocardiograph, an electronic apparatus serving in the study of the action of the heart, revealing information on heart action additional to that obtained by the electrocardiograph.
437. Investigation of post-mortem changes in muscle, related possibly to rigor mortis.
438. Studies on fiber length of muscles as related to efficiency of muscle action.

GYNECOLOGY

Dr. J. Mason Hundley, in charge of research.

Results to be published in professional periodicals, including the
Bulletin of the School of Medicine, University of Maryland.

439. Studies on dysmenorrhea.
440. Study of ureteral changes following radiation of carcinoma of the cervix.
441. Experimental study on *Trichomonas vaginalis*.
442. Adenocarcinoma of the body of the uterus in regard to treatment and presence of malignant cells in the uterine wall, postradiation. Presented before the American Gynecological Society in May.
443. Primary carcinoma of the ureter.
444. Sarcoma of the uterus.
445. Indications for removal of the normal uterus.
446. Tuberculosis of the generative system.

HISTOLOGY AND EMBRYOLOGY

Dr. Carl R. Davis, in charge of research.

Results to be published in professional periodicals, including the
Bulletin of the School of Medicine, University of Maryland.

447. Studies in the development of very thin (one micron) histological sections of tissue.

HYGIENE AND PUBLIC HEALTH

Dr. Huntington Williams, in charge of research.

Results to be published in professional periodicals, including the
Bulletin of the School of Medicine, University of Maryland.

448. Studies in the teaching of social medicine.

MEDICINE

Dr. Maurice C. Pincoffs, in charge of research.

Results to be published in professional periodicals, including the
Bulletin of the School of Medicine, University of Maryland.

449. Benzodioxan studies in hypertension.
450. Clinical studies in circulating blood volumes with dye T1824.
451. Chloromycetin studies in Rocky Mountain spotted fever.
452. The use of furmethide in neurogenic bladder disturbances.
453. Prophylactic use of dicumarol in coronary thrombosis.
454. Effect of butanefrine upon asthma.
455. Effect of theoglycinate in asthma.
456. Aerosolization of powdered preparations in asthma.
457. Visualization of sinuses with opaque media.
458. Treatment of sinusitis with displacement method.
459. Survey of cardiacs in Obstetrical Department.
460. Evaluation of penicillin fortified by caroniamide in early syphilis and syphilis of pregnancy.
461. An experiment in teaching psychotherapy.
462. Attitude of adoptive mothers who bring children to a child guidance clinic.
463. Source and circumstances of referral and prognosis of treatment in a child guidance clinic.
464. The effect of the administration of protein hydrolysate (amino acid) upon the frequency of upper respiratory infections in infants and children; clinical and laboratory studies.
465. Improved nutrition, growth, and mental development resulting from the feeding of an improved carbohydrate in the infant formulae.
466. A study to show that malnutrition and mental retardation can frequently be corrected by the addition of certain food elements lacking in the usual diet.
467. Studies in Rh-iso-immunization in pregnancy. II. Factors influencing prognosis in sensitized women.
468. Studies in Rh-iso-immunization in pregnancy. III. Rh-iso-immunization: relation to widespread infantile central nervous system damage.
469. Relation of Rh incompatibility to abortion.
470. Determination of blood lipase using synthetic esters as the substrate.

NEUROSURGERY

Dr. John A. Wagner, in charge of research.

Results to be published in professional periodicals including the
Bulletin of the School of Medicine, University of Maryland.

471. Experimental torulosis in the mouse; graded experiments relative to pathogenicity.

- 472. Review of literature concerning torulosis of the central nervous system and studies of bacteriology of etiologic organism.
- 473. Electroencephalogram studies in subdural hematoma.
- 474. Ruptured intracranial aneurysm; pathologic study.
- 475. Experimental studies of intraventricular pressure and intraventricular hemorrhage.
- 476. Changing concepts in the pathogenesis of brain abscess; clinico-pathologic study.
- 477. Reactions of the sympathetic nervous system to specific physical agents in essential hypertension.

OBSTETRICS

Dr. Louis H. Douglass, in charge of research.

Results to be published in professional periodicals, including the
Bulletin of the School of Medicine, University of Maryland.

- 478. Vitamin E in the treatment of hypertension in pregnancy.
- 479. Bladder retention: The use of mercurochrome as a preventative agent.
- 480. Studies in X-ray cephalopelvimetry with particular reference to the areas of the pelvis and the pubic arch.
- 481. Studies in the elimination of oxytocic drugs under saddle block anesthesia.
- 482. Routine prenatal chest X-ray-incidence of unsuspected pulmonary tuberculosis.
- 483. A follow-up study of renal disease complicated by pregnancy.
- 484. The incidence and treatment of ruptured intervertebral disc complicating pregnancy.

PATHOLOGY

Dr. Hugh R. Spencer, in charge of research.

Results to be published in professional periodicals, including the
Bulletin of the School of Medicine, University of Maryland.

- 485. Studies on coronary circulation: Experimental induction of collateral circulation.
- 486. Cytologic studies of sputum in the diagnosis of cancer of the lung.

PHARMACOLOGY

Dr. John C. Krantz, in charge of research.

Results to be published in professional periodicals, including the
Bulletin of the School of Medicine, University of Maryland.

- 487. Studies in general anesthesia.
- 488. Studies in hypertension.
- 489. Studies in digitalis standardization.
- 490. Studies in theophylline blood levels and action.
- 491. Intravenous fat alimentation.

PHYSIOLOGY

Dr. William R. Amberson, in charge of research.

Results to be published in professional periodicals, including the
Bulletin of the School of Medicine, University of Maryland.

- 492. A study of muscle proteins extracted from whole tissues and of the histological picture following such extractions.
- 493. A study of the effects of stress in cats produced by exposure to high altitudes upon the plasma cholesterol, plasma protein, and the formed elements of the blood.
- 494. The relation between the normal human electroencephalogram and Rorschach test factors.
- 495. Changes in the human brain wave pattern and subdural hematoma.
- 496. Effects of cold, heat, drugs, and carbohydrates on the ceilings attained by cats when exposed to severe anoxia and the subsequent electrolyte changes.

PLASTIC SURGERY

Dr. E. A. Kittruski, in charge of research.

Results to be published in professional periodicals, including the
Bulletin of the School of Medicine, University of Maryland.

- 497. The incidence of malignancy in X-ray and radium burns.

SCHOOL OF PHARMACY

Dr. A. G. DuMez, in charge of research.

Results to be published in professional periodicals.

- 498. Succindialdehyde.
- 499. Preparation of synthetic analogs of adrenal cortical hormones.
- 500. Studies in tuberculo-static agents.
- 501. Preparation of substances for testing against epithelioma and leukemia.
- 502. Anti-spasmodics and local anesthetics.
- 503. Studies in fungicides.
- 504. Development of alliphatic diazo-compounds.
- 505. Metabolism and chemotherapy of trypanizomes.
- 506. Colorimetric assay of digitalis.
- 507. Modification of the official assay of ergot.
- 508. Extraction of drugs by means of pressure cookers.

APPENDIX A

The following State agencies indicated research projects underway:¹

1. Board of Natural Resources (1)
 - Department of Geology, Mines and Water Resources (10)
 - Department of Research and Education (23)
 - Department of Tidewater Fisheries (5)
2. Chesapeake-Potomac Study Commission (1)
3. Commission on the State House and Legislative Office Space (1)
4. Commission to Study the Existing Child Labor Laws of Maryland (1)
5. Commission to Study the Law and Practice with Respect to Physically Handicapped Persons in State Employment (1)
6. Department of Employment Security (6)
 - Examining Boards (see nos. 7 to 10 inclusive)
7. Board of Barber Examiners (1)
8. Board of Examiners in Optometry (1)
9. Maryland State Board of Examiners of Nurses (1)
10. Maryland State Board of Examiners of Stationary Engineers (1)
11. Hall of Records (2)
12. Interstate Commission on the Potomac River Basin (1)
13. Legislative Council (2)
 - Committee for Study of Problems of Chronic Alcoholism (1)
 - Committee on Prison Labor, Education and Rehabilitation of Prisoners (1)
14. Maryland Commission on Uniform Accounts (1)
15. Maryland Historical Society
 - Maryland War Records Division (1)
16. Maryland-National Capital Park and Planning Commission (2)
17. Maryland Racing Commission (1)
18. Maryland State Planning Commission (12)
19. Maryland State School for the Deaf (1)
20. Maryland Traffic Safety Commission (1)
21. Maryland Veterans' Housing Commission (1)
22. Medico-Legal Psychiatry Commission (1)
23. State Board of Agriculture (see University of Maryland)
24. State Board of Mental Hygiene (11)
25. State Department of Education (8)
26. State Department of Health (6)

¹Number of separate projects given in parentheses.

27. State Department of Public Welfare (2)
28. State Roads Commission (3)
29. University of Maryland and State Board of Agriculture (396)
30. Upper Potomac River Flood Control Survey Commission (1)

The following State agencies indicated no research projects underway:¹

1. Administrator of Loan Laws
2. Board of Revenue Estimates
3. Commission on Uniform State Laws
4. Department of Budget and Procurement
5. Department of Correction
6. Department of Labor and Industry
7. Department of Legislative Reference
8. Department of Maryland State Police
9. Department of Motor Vehicles
10. Department of Public Improvements
11. Department of State Employment and Registration
12. Division of Parole and Probation
Examining Boards (see nos. 13 to 29 inclusive)
13. Board of Examiners of Public Accountants
14. Board of Medical Examiners of Maryland
15. Board of Osteopathic Examiners
16. Maryland Board of Pharmacy
17. Maryland State Board of Chiropractic Examiners
18. Maryland State Board of Commissioners of Plumbing
19. Maryland State Board of Dental Examiners
20. Maryland State Board of Law Examiners
21. State Board of Chiropody Examiners
22. State Board of Electrical Examiners and Supervisors
23. State Board of Examiners and Registration of Architects
24. State Board of Examiners of Moving Picture Operators
25. State Board of Funeral Directors & Embalmers
26. State Board of Hairdressers & Beauty Culturists
27. State Board of Motion Picture Censors
28. State Board of Registration for Professional Engineers and Land Surveyors
29. State Veterinary Medical Board of Maryland

¹Excluding six nonreporting agencies.

30. Land Office of Maryland
31. Maryland State Fair Board
32. Maryland State Library
33. Maryland Tuberculosis Sanatoria
34. Maryland Veterans Commission
35. Maryland Water Pollution Control Commission
36. Miners Hospital
37. Morgan State College
38. Public Service Commission
39. St. Mary's Female Seminary
40. Secretary of State
41. State Accident Fund
42. State Auditor
43. State Aviation Commission of Maryland
44. State Banking Department
45. State Insurance Department
46. State Law Department
47. State Military Department
48. State Tax Commission
49. State Teachers College, Bowie
50. State Teachers College, Frostburg
51. State Teachers College, Salisbury
52. State Teachers College, Towson
53. Treasury Department

APPENDIX B

LAWS OF MARYLAND ACTS OF 1947 CHAPTER 596

AN ACT to add a new section to Article 88C of the Annotated Code of Maryland (1939 Edition), title "State Planning Commission", said new section to be known as Section 5A and to follow immediately after Section 5 of said Article, relating to certain research work being conducted or undertaken by the several State departments, officials and agencies.

SECTION 1. Be it enacted by the General Assembly of Maryland, That a new section be and it is hereby added to Article 88C of the Annotated Code of Maryland (1939 Edition), title "State Planning Commission", said new section to be known as Section 5A, to follow immediately after Section 5 of said Article, and to read as follows:

5A. The State Planning Commission is hereby authorized, for the information of the several departments and officials of the State and the public, to compile and make available, at such time or times as it may deem desirable, a list or inventory of current research being conducted by the several State departments, institutions, officials or agencies on questions or subjects affecting or relating to the work or activities of any department or agency of the State. It shall be the duty of every State department, institution, official or agency which is conducting, or under whose supervision or control is being conducted, any research work as above prescribed, to report to the State Planning Commission as to such research work, the nature and purpose of the study and anticipated date of its completion and probable publication. Provided, however, that whenever such department, institution, official or agency is conducting research on matters which, if discussed or made public, would be against public interest or tend to impede or obstruct such research, then, with the permission of the State Planning Commission the department, institution, official or agency may be excused from reporting on such matters. In the event of dispute between the State Planning Commission and any department, institution, official or agency as to whether or not any subject of research should be so reported, the matter shall be referred to the Governor whose decision shall be final.

SEC. 2. And be it further enacted, That this Act shall take effect June 1, 1947.

Approved April 25, 1947

